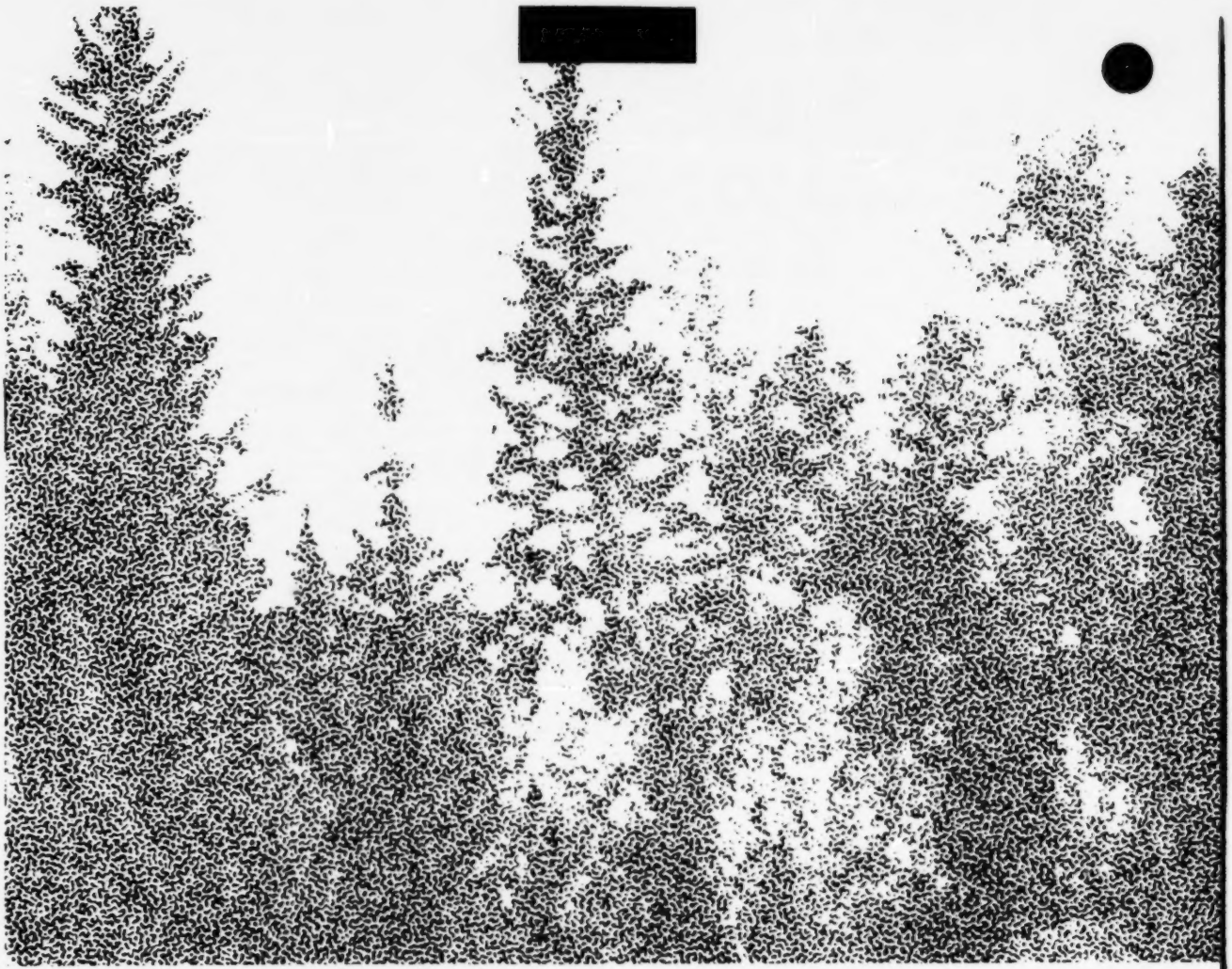
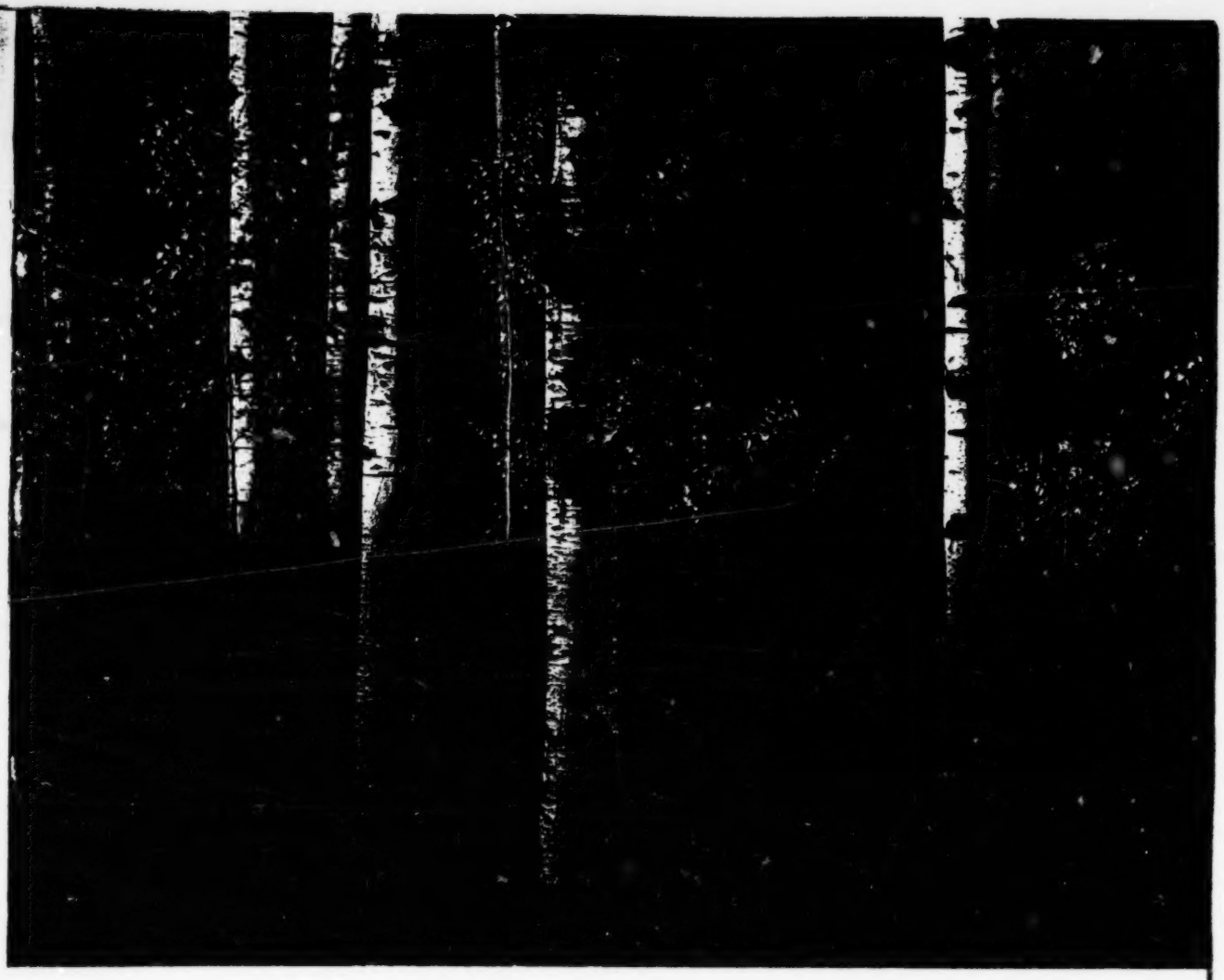


BOYLE
LAC LA BICHE
TIMBER DEVELOPMENT AREA

Alberta



BOYLE
LAC LA BICHE
TIMBER DEVELOPMENT AREA

THE FOREST RESOURCE

Alberta's reserves constitute the largest supply of coniferous and deciduous timber available in North America. The Boyle/Lac La Biche Timber Development Area (TDA) is one of Alberta's best aspen (poplar) development opportunities. The development of areas similar to the Boyle/Lac La Biche TDA has made Alberta a dynamic force in the forest industry in Canada, and around the world. Alberta's primary hardwood species, trembling aspen (Populus tremuloides), predominates in the Boyle/Lac La Biche area, and is suitable for the production of waferboard, oriented strandboard, particleboard and other panel products.

Boyle/Lac La Biche Timber Development Area Forest Resource Overview

Deciduous Annual Allowable Cut	384,846 cubic meters (89,669,000 board feet)
Gross Area	677,207 hectares (1,672,701 acres)

QUALITY OF RESOURCE

The Boyle/Lac La Biche Timber Development Area is located in north eastern Alberta, approximately 219 kilometers (137 miles) northeast of Edmonton. The total area of the Boyle/Lac La Biche TDA is 677,207 hectares (1,672,701 acres), and can be broken down by productivity classes as follows:

Productive	384,962 hectares (950,856 acres)
Potentially Productive	4,589 hectares (11,335 acres)
Non-productive	287,656 hectares (710,510 acres)

The forest cover in the TDA is primarily hardwood, with trembling aspen predominating. The trembling aspen volume in the area is 13 million cubic meters (3.0 billion board feet). Growth rates in aspen range up to 2.41 cubic meters/hectare/year (228 board feet/acre/year) at 90 years of age. In mature and overmature stands likely to be harvested over the next 20 years, the approximate average tree size is 22.2 meters (72.8 feet) in height, and 25.3 centimeters (10.0 inches) in diameter at breast height. The average volume per tree is 0.43 cubic meters (100 board feet - "Alberta log rule").

For deciduous stands at or near maturity, advanced decay percentages range from 2.9 to 6.7 percent. The amount of decay is highly variable and is influenced by a number of factors including site quality, tree growth, genetic constitution, stand density and age. For deciduous stands a high decay and subsequent mortality usually occurs after 100 years of age, with most stands having little or no deciduous volume at 180 years.

CULL PERCENTAGE (FOR PULP UTILIZATION)

- for deciduous stands likely to be harvested over the next 20 years

HEIGHT		
METERS	FEET	CULL (as a percent of gross volume*)
12 - 17	40 - 59	2.9
18 - 24	60 - 79	6.7
24 - 30	80 - 99	5.8

* 15 centimeters (6 inch) stump diameter and greater.

WOOD SUPPLY

DECIDUOUS WOOD SUPPLY -

Annual Allowable Cut	Committed	Uncommitted
384,846 cubic meters (89,669,000 board feet)	0 cubic meters	384,846 cubic meters (89,669,000 board feet)

Ninety percent of this wood supply is available in pure stands of aspen. The remainder is found in aspen-conifer mixedwood stands. This is readily available through integrated harvesting of the mixed stands in conjunction with coniferous timber operators in the area. The timber operator is:

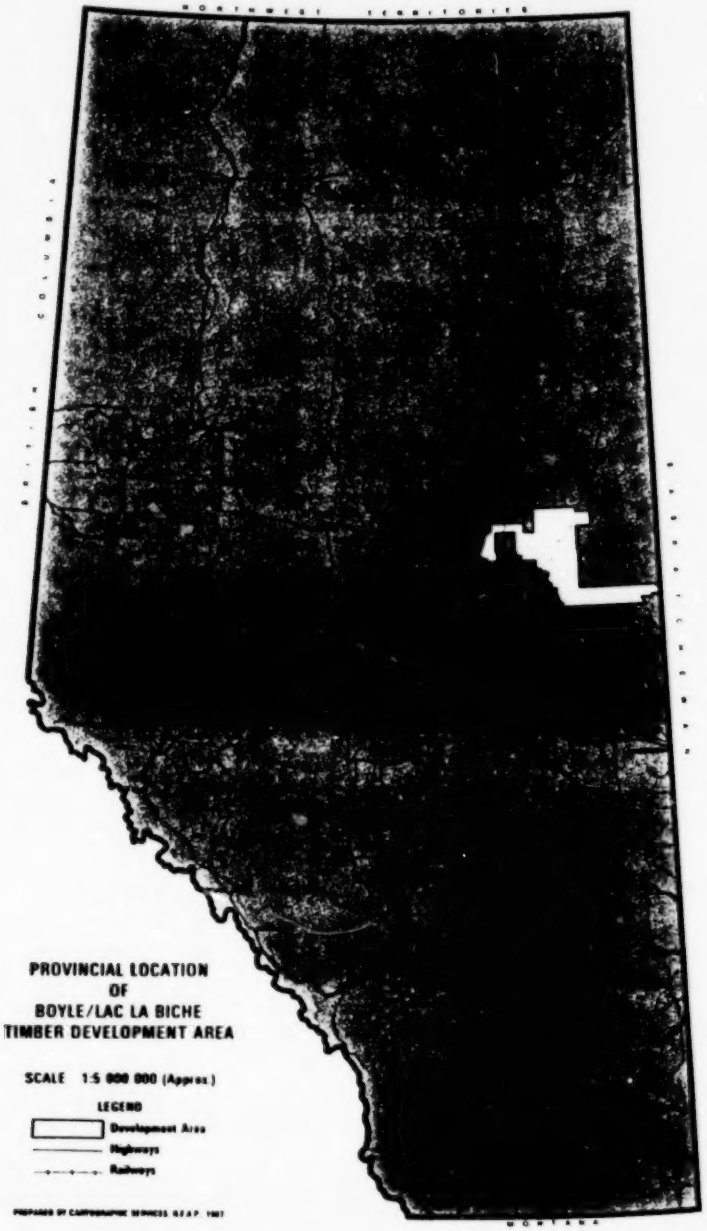
Quota Holder	Address
Ed Bobocel Lumber Co. Ltd.	Box 1150 Lac La Biche, Alberta T0A 2C0

In addition to the supply of roundwood in the Timber Development Area there is a significant supply of aspen on private lands and Metis Settlements adjacent to the Boyle/Lac La Biche TDA. The resource is significant in terms of its extent and proximity to the TDA. The developer of the TDA would be able to obtain this additional wood supply through purchase agreements with the Metis colonies and private land owners.

RESEARCH & DEVELOPMENT

A recent study by Morrison-Knudsen concluded that it is both technically and economically feasible to produce oriented strandboard (OSB) from sawmill residues namely slabs, edgings and pulp chips. The process involves maxi-chipping residues, followed by ring flaking and the use of Morrison-Knudsen's patented electrostatic orientator in the forming line. Incorporation of this type of system would eliminate the need for a full fledged green log yard and ancilliary equipment thus reducing capital costs of a new plant by at least 10%.

TDA LOCATION

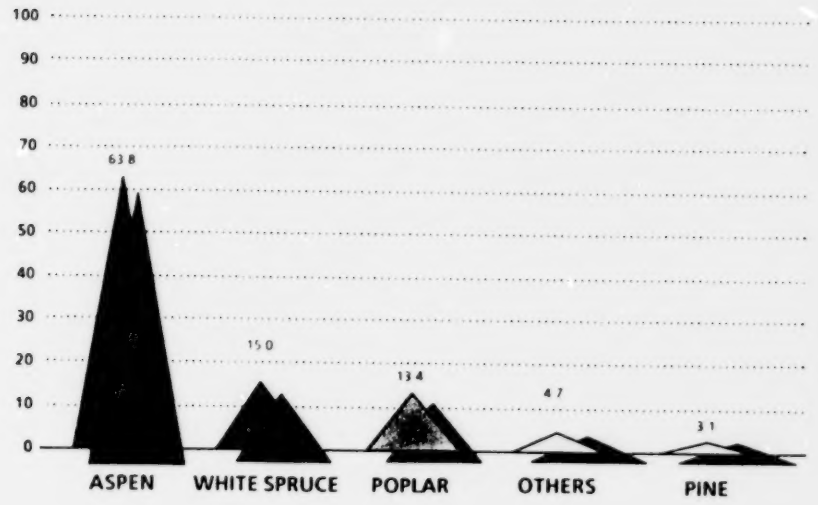


CLASSIFICATION MAP

DECIDUOUS LAND BASE

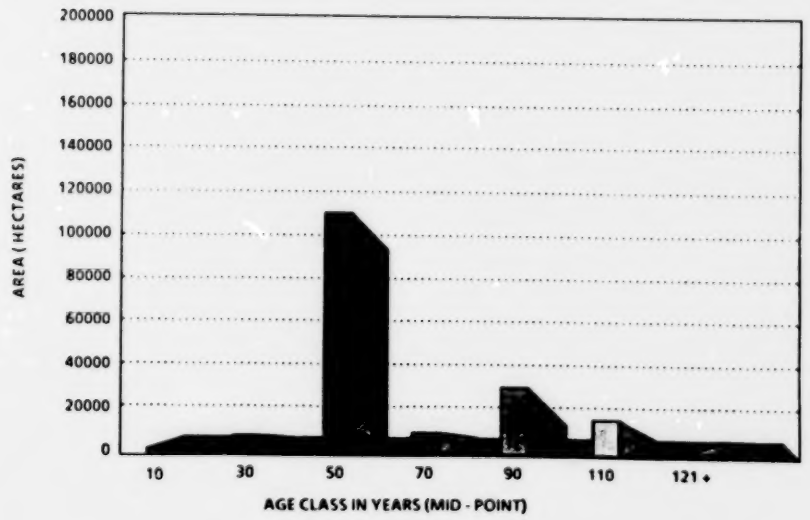
PERCENT VOLUME BY SPECIES

BOYLE/LAC LA BICHE TDA



AREA BY AGE CLASS

BOYLE/LAC LA BICHE TDA



STAND/STOCK TABLE
MATURE DECIDUOUS LAND BASE

Utilization Standards: Minimum Stump Diameter - 15 cm (6 inch)
Minimum Top Diameter (inside bark) - 10 cm (4 inch)

DBH (CM)	DBH (INCH)	NS/HA	NS/ACRE	GROSS VOLUME (CU M/HA)	GROSS VOLUME (FBM/AC)
12	4.7	108	44	NIL	NIL
14	5.5	79	32	3	283
16	6.3	81	33	6	566
18	7.1	56	23	7	660
20	7.9	48	19	9	849
22	8.7	46	19	11	1,038
24	9.4	41	17	13	1,226
26	10.2	39	16	16	1,509
28	11.0	29	12	15	1,415
30	11.8	29	12	17	1,604
32	12.6	21	9	15	1,414
34	13.4	16	7	13	1,226
36	14.2	13	5	12	1,132
38	15.0	12	5	12	1,132
40	15.7	8	3	9	849
42	16.5	6	2	7	660
44	17.3	4	2	6	566
46	18.1	3	1	5	472
48	18.9	2	1	4	377
50	19.7	2	1	3	283
52	20.5	1	0	2	189
54	21.3	1	0	1	94

AVERAGE DBH	19.9 centimeters
AVERAGE HEIGHT	20.3 meters
GROSS VOLUME/TREE	.245 cubic meters
CULL %	4.40

CM - CENTIMETERS
DBH - DIAMETER BREAST HEIGHT
NS - NUMBER OF STEMS
HA - HECTARE
CU M/HA - CUBIC METERS/HECTARE
FBM/AC - BOARD FEET/ACRE

PROVINCIAL FULLY STOCKED YIELD TABLES
HARDWOODS MEDIUM SITE

Utilization Standards: Minimum Stump Diameter - 15 cm (6 inch)
Minimum Top Diameter (inside bark) - 10 cm (4 inch)

TOTAL AGE (YR)	TOP HEIGHT (M)	TOP HEIGHT (FT)	GROSS VOLUME (CU M/HA)	GROSS VOLUME (MFBM/AC)	GROSS MAI (CU M/HA/YR)	GROSS VOLUME (FBM/AC/YR)	NO. OF TREES (PER HA)	NO. OF TREES (PER AC)
10	4.2	13.7	0.0	0.0	0.0	0.0	0	0
20	9.0	29.4	0.0	0.0	0.0	0.0	0	0
30	12.7	41.5	0.0	0.0	0.0	0.0	0	0
40	15.5	50.8	7.8	0.7	0.19	18.3	138	56
50	17.7	58.1	70.0	6.6	1.40	131.9	544	220
60	19.5	63.8	119.3	11.3	1.99	187.5	617	250
70	20.9	68.4	158.4	15.0	2.27	214.0	615	249
80	22.0	72.1	190.9	18.0	2.39	225.0	592	240
90	22.9	75.3	217.1	20.5	2.41	227.5	565	229
100	23.7	77.9	238.9	22.5	2.39	225.3	540	219

CM - CENTIMETERS
YR - YEARS
M - METERS
FT - FEET
CU M/HA - CUBIC METERS/HECTARE
CU M/HA/YR - CUBIC METERS/HECTARE/YEAR
MAI - MEAN ANNUAL INCREMENT
FBM/AC/YR - BOARD FEET/ACRE/YEAR
HA - HECTARE
AC - ACRE

COMMUNITY PROFILE - LAC LA BICHE

The town of Lac La Biche is strategically located south of the Boyle/Lac La Biche Timber Development Area. The town of Lac La Biche is situated on the shores of Lac La Biche and offers a wide array of commercial and recreational opportunities. Lac La Biche has a positive attitude towards economic development. The economic base of Lac La Biche is very diverse and includes industries such as agriculture, oil and gas, forestry, commercial fishing and tourism. A profile of the community is given below:

POPULATION		2,242
LABOUR FORCE	- male	550
	- female	450
	- a number of independent logging contractors, with considerable woods operation experience, are located in Lac La Biche.	
DISTANCE FROM MAJOR CENTRES		219 kilometers (137 miles) northeast of Edmonton 290 kilometers (180 miles) south of Fort McMurray
CONNECTING HIGHWAYS		#55, high standard, paved #36, high standard, paved
RAILWAY		Canadian National Railway
AIRPORT - longest runway		1,765 meters (5,800 feet) paved surface, night operation
WATER		The town of Lac La Biche is located at the southern end of Lac La Biche
ELEVATION		561 meters (1,839 feet)
TEMPERATURE - seasonal averages		winter -18.4° centigrade (-1.1°F) summer +17.0° centigrade (62.6°F)
ANNUAL PRECIPITATION	- rain	365.1 millimeters (14.4 inches)
	- snow	207.6 centimeters (81.7 inches)
	- total	562.2 millimeters (22.1 inches)
FROST FREE DAYS		105
ELECTRICAL POWER - industrial rates		Trans Alta Utilities Corporation $8.76 - $15.17 per month per kilowatt dependent on demand plus $0.009 - $0.016 per kilowatt-hour energy charge.
NATURAL GAS - industrial rates		Town of Lac La Biche Natural Gas System $3.13/gigajoule per month plus a $12.00 service charge per month.
MILL RATE - industrial		$38.185/$1000 assessed tax value
	- residential	$28.202/$1000 assessed tax value
PER CAPITA DEBT		$1,757.00 (1983)
MEDICAL		1 Hospital (100 beds) 7 Doctors 2 Dentists

EDUCATION	1 Daycare/Nursery 2 Elementary (Grades 1 - 6) 1 Junior High (Grades 7 - 9) 1 High School (Grades 10 - 12) Alberta Vocational Centre
RECREATION	Curling, Skiing, Tennis, Skating, Boating, Snowmobiling, Baseball, Fishing, Rifle Range, Golf, Hunting, Camping

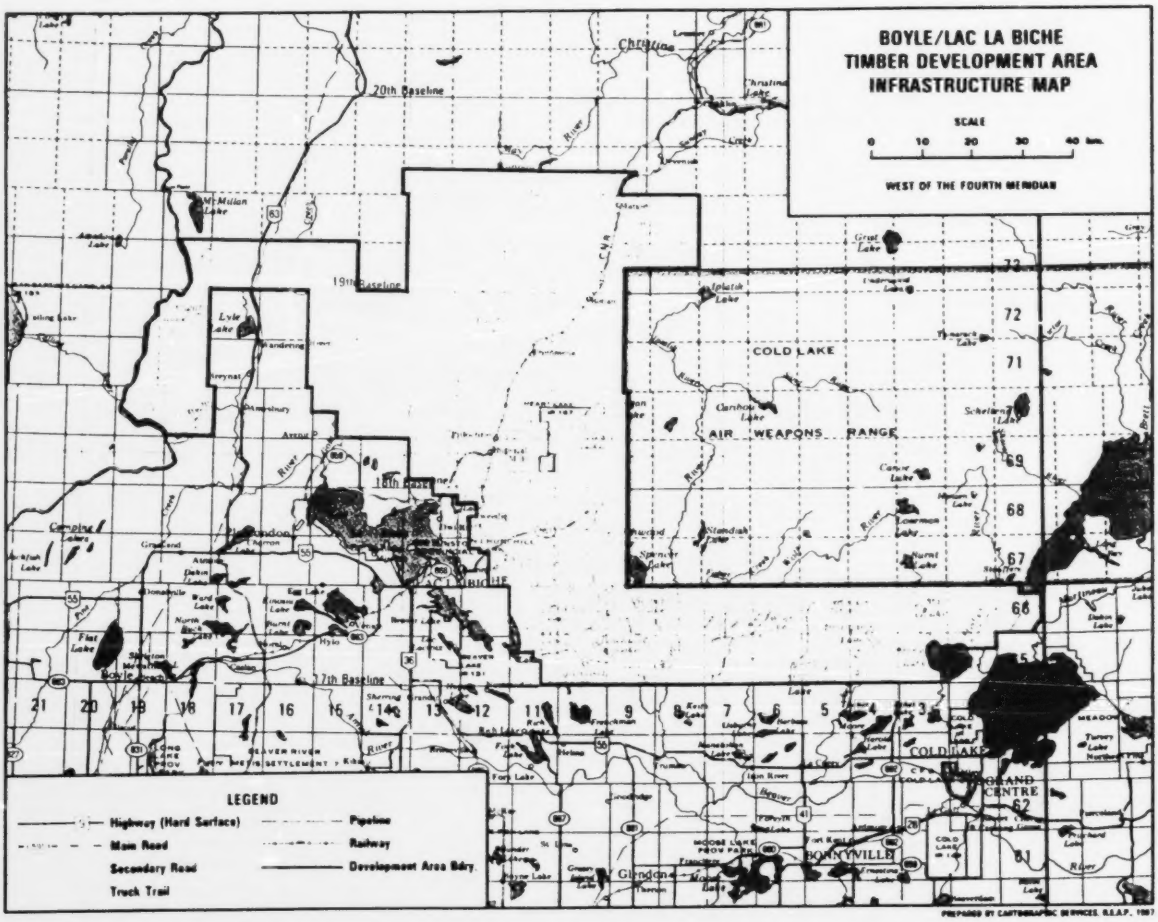
COMMUNITY PROFILE - ATHABASCA

The town of Athabasca is located south of the Boyle/Lac La Biche Timber Development Area. Athabasca's positive attitude and available infrastructure provide the necessary ingredients for economic development. The economic base of Athabasca is derived from agriculture, forest products, gas, oil and coal. A profile of the community is given below:

POPULATION		1,933
LABOUR FORCE	- male	450
	- female	340
	- a number of independent logging contractors, with considerable woods operation experience, are located in Athabasca.	
DISTANCE FROM MAJOR CENTRES		146 kilometers (91 miles) north of Edmonton
CONNECTING HIGHWAYS		#2, high standard, paved.
RAILWAY		Canadian National Railway
AIRPORT - longest runway		912 meters (3,000 feet) paved surface, night operation
WATER - major river - Athabasca		Flow rate 703 cubic metres/second (24,286 cubic feet/second) average from May to October
ELEVATION		560 meters (1,842 feet)
TEMPERATURE - seasonal averages		winter -17.9° centigrade (0°F) summer 16.2° centigrade (61.3°F)
ANNUAL PRECIPITATION - rain		352.6 millimeters (13.88 inches)
- snow		140.6 centimeters (55.35 inches)
- total		493.1 millimeters (19.41 inches)
FROST FREE DAYS		111
ELECTRICAL POWER - industrial rates		Trans Alta Utility Corp. $8.76 - $15.17 per month per kilowatt dependent on demand plus $0.009 - $0.016 per kilowatt-hour energy charge.

NATURAL GAS - industrial rates	I.C.G. (Plains Western) $7.50 - $200.00 per month fixed charge plus $3.164 - $3.474 per thousand cubic feet. The rates vary according to consumption.
MILL RATE - industrial - residential	$28.79/$1000 assessed tax value $24.59/$1000 assessed tax value
PER CAPITA DEBT	$1,044.34
MEDICAL	1 Hospital (50 beds) 5 Doctors 2 Dentists
EDUCATION	1 Daycare/Nursery 1 Elementary (Grades 1 - 6) 1 Junior High (Grades 7 - 9) 1 High School (Grades 10 - 12) 1 University
RECREATION	Baseball, Curling, Hunting, Skiing, Skating, Golf, Fishing, Boating, Swimming, Tennis, Camping, Rifle Range

INFRASTRUCTURE MAP



CONTACTS

To assist prospective applicants in preparing their proposal for the Boyle/Lac La Biche Timber Development Area, a list of contact persons with Alberta Forestry, Lands and Wildlife is included.

Department	Contact Person
Alberta Forestry, Lands and Wildlife 9915 - 108 Street Edmonton, Alberta T5K 2C9	Mr. F.W. McDougall Deputy Minister Forestry, Lands and Wildlife (403) 427-3552 Mr. C.B. Smith Assistant Deputy Minister Alberta Forest Service (403) 427-3542

Also, in order to meet the growing demands of the forest industry the Forest Industry Development Division was organized within the Department of Forestry, Lands and Wildlife. The role of this new division is to assist new and existing forest companies and private investors to upgrade and utilize Alberta's vast uncommitted forest resources for a variety of forest products. The division is made up of people that can offer expertise in all aspects of forestry.

Mr. J.A. Brennan
Executive Officer
Forest Industry Development Division
930, 9942 - 108 Street
Edmonton, Alberta
T5K 2J5
(403) 422-7011